

CLAIMS

Sub. a1 → 1. An apparatus for treating waste water,
comprising:
a packed bed of solid catalyst and/or solid adsorbent;
and

(1) a pressure layer having an ability of following up
a deformation or a movement of a surface of the packed bed,
the pressure layer being provided on the packed bed, or

(2) a layer for dispersing and mitigating an upward
stream of waste water and/or gas, the layer being provided
under the packed bed.

2. An apparatus for treating waste water,
comprising:
a packed bed of solid catalyst and/or solid adsorbent;
and

a water-permeable pressure layer having an ability
of following up a deformation of a surface of the packed bed,
wherein the water-permeable pressure layer is
provided on the packed bed.

3. The apparatus according to claim 2, further
comprising a partition for dividing the boundary area
between an upper part of the packed bed and the water-

Sub A1 art.

permeable pressure layer into a plurality of segments in a vertical direction.

4. The apparatus according to claim 2 or 3, wherein the water-permeable pressure layer has a void percentage of 20 to 70 volume percent.

5. The apparatus according to any one of claims 2 to 4, wherein the water-permeable pressure layer has a height of 30 to 1000mm.

6. The apparatus according to any one of claims 2 to 5, wherein the water-permeable pressure layer is constituted of a substance having a plurality of metallic or ceramics particles.

7. The apparatus according to claim 6, wherein the particle has an average particle diameter of 3 to 30mm.

8. The apparatus according to any one of claims 3 to 7, wherein the respective segments formed by the vertical partition have a cross-sectional area in a horizontal direction of 50 to 5000cm².

9. The apparatus according to any one of claims 3

Sub. a. 10 to 8, wherein the partition has a height of 20 to 300cm in a vertical direction.

10. The apparatus according to any one of claims 2 to 9, wherein a layer for dispersing and mitigating an upward stream of waste water and/or gas is provided under the packed bed.

11. The apparatus according to claim 10, wherein the dispersing and mitigating layer has a height of 10 to 300mm.

Sub. a. 12 12. The apparatus according to claim 10 or 11, wherein the dispersing and mitigating layer has a void percentage of 20 to 99 volume percentage.

13. The apparatus according to any one of claims 10 to 12, wherein the dispersing and mitigating layer includes a substance having a plurality of metallic or ceramics particles.

14. The apparatus according to claim 13, wherein the metallic or ceramics particle has an average particle diameter of 3 to 30mm.

4/5

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15. An apparatus for treating waste water, comprising a packed bed of solid catalyst and/or solid adsorbent; and

a layer for dispersing and mitigating an upstream of waste water and/or gas,

wherein the dispersing and mitigating layer is provided under the packed bed.

16. The apparatus according to claim 15, wherein the dispersing and mitigating layer has a height of 10 to 300mm.

Sub. 93

17. The apparatus according to claim 15 or 16, wherein the dispersing and mitigating layer has a void percentage of 20 to 99 volume percentage.

18. The apparatus according to any one of claims 15 to 17, wherein the dispersing and mitigating layer is constituted by a substance having a plurality of metallic or ceramics particles.

19. The apparatus according to claim 18, wherein the metallic or ceramics particle has an average particle diameter of 3 to 30mm.

20. The apparatus according to any one of claims 1
to 19, used in a wet-oxidation treatment.

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F₄*

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